AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-26. (Canceled)

27. (New) A method for multi-objective portfolio analysis using Pareto Sorting Evolutionary Algorithms, the method comprising the steps of:

(a) randomly drawing an initial population of individual portfolio allocations that are generated from a portfolio allocations archive by using a combination of linear programming and sequential linear programming algorithms using a computing device;

(b) passing the initial population of portfolio allocations through a dominance filter to identify a non-dominated subset of parent portfolio allocations;

(c) committing the non-dominated subset of parent portfolio allocations to a non-dominated portfolio allocations archive;

(d) randomly combining matched pairs of parent portfolio allocations to create offspring portfolio allocations;

(e) passing the offspring portfolio allocations through the dominance filter to identify a non-dominated subset of offspring portfolio allocations;

(f) combining the non-dominated subset of parent portfolio allocations with the non-dominated subset of offspring portfolio allocations into a larger set of portfolio allocations;

(g) passing the larger set of portfolio allocations through a non-crowding filter to identify a reduced subset of portfolio allocations;

(h) creating a new population of individual portfolio allocations from the reduced subset of portfolio allocations;

(i) updating the non-dominated portfolio allocations archive with the new population of individual portfolio allocations;

(j) repeating steps (a) through (i) for a plurality of generations; and

(k) passing the updated non-dominated portfolio allocations archive through the dominance filter to generate an interim efficient frontier in a portfolio performance space having at least three-dimensions, the interim efficient frontier being used in investment decisions.

28. (New) The method of Claim 27, wherein the non-dominated subset of parent portfolio allocations has a first cardinality.

29. (New) The method of Claim 28, wherein the non-dominated subset of offspring portfolio allocations has a second cardinality that is different than the first cardinality.

30. (New) The method of Claim 29, wherein the larger set of portfolio allocations has a third cardinality that is equal to the first cardinality plus the second cardinality.

31. (New) The method of Claim 30, wherein the reduced subset of portfolio allocations has a fourth cardinality that is less than the third cardinality.

32. (New) The method of Claim 27, wherein steps (a) – (j) are repeated until convergence is achieved or allocated computational cycles are exhausted.

33. (New) The method of Claim 27, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is exactly equal to the reduced set of portfolio allocations if the fourth cardinality is equal to the initial population of individual portfolio allocations.

34. (New) The method of Claim 27, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is created by randomly drawing additional individual portfolio

allocations from the portfolio allocations archive if the fourth cardinality is less than to the initial population of individual portfolio allocations.

35. (New) The method of Claim 27, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is created by randomly discarding individual portfolio allocations from the reduced subset of portfolio allocations if the fourth cardinality is greater than to the initial population of individual portfolio allocations.

36. (New) The method of Claim 35, wherein the new population of individual portfolio allocations is created by randomly injecting individual portfolio allocations from the portfolio allocations archive until the fourth cardinality is equal to a desired number of individual portfolio allocations.

37. (New) A system for multi-objective portfolio analysis using Pareto Sorting Evolutionary Algorithms comprising an efficient frontier processing portion that randomly draws an initial population of individual portfolio allocations that are generated from a portfolio allocations archive by using a combination of linear programming and sequential linear programming algorithms; passes the initial population of portfolio allocations through a dominance filter to identify a non-dominated subset of parent portfolio allocations; commits the non-dominated subset of parent portfolio allocations to a non-dominated portfolio allocations archive; randomly combines matched pairs of parent portfolio allocations to create offspring portfolio allocations; passes the offspring portfolio allocations through the dominance filter to identify a non-dominated subset of offspring portfolio allocations; combines the non-dominated subset of parent portfolio allocations with the non-dominated subset of offspring portfolio allocations into a larger set of portfolio allocations; passes the larger set of portfolio allocations through a non-crowding filter to identify a reduced subset of portfolio allocations; creates a new population of individual portfolio allocations from the reduced subset of portfolio allocations; updates the non-dominated portfolio allocations archive with the new population of individual portfolio allocations; and

passes the updated non-dominated portfolio allocations archive through the dominance filter to generate an interim efficient frontier in a portfolio performance space having at least three-dimensions, the interim efficient frontier being used in investment decisions.

38. (New) The system of Claim 37, wherein the non-dominated subset of parent portfolio allocations has a first cardinality.

39. (New) The system of Claim 38, wherein the non-dominated subset of offspring portfolio allocations has a second cardinality that is different than the first cardinality.

40. (New) The system of Claim 39, wherein the larger set of portfolio allocations has a third cardinality that is equal to the first cardinality plus the second cardinality.

41. (New) The system of Claim 40, wherein the reduced subset of portfolio allocations has a fourth cardinality that is less than the third cardinality.

42. (New) The system of Claim 37, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is exactly equal to the reduced set of portfolio allocations if the fourth cardinality is equal to the initial population of individual portfolio allocations.

43. (New) The system of Claim 37, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is created by randomly drawing additional individual portfolio allocations from the portfolio allocations archive if the fourth cardinality is less than to the initial population of individual portfolio allocations.

44. (New) The system of Claim 37, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual

portfolio allocations is created by randomly discarding individual portfolio allocations from the reduced subset of portfolio allocations if the fourth cardinality is greater than to the initial population of individual portfolio allocations.

45. (New) The system of Claim 44, wherein the new population of individual portfolio allocations is created by randomly injecting individual portfolio allocations from the portfolio allocations archive until the fourth cardinality is equal to a desired number of individual portfolio allocations.

46. (New) A computer readable medium for multi-objective portfolio analysis using Pareto Sorting Evolutionary Algorithms comprising an efficient frontier processing portion that randomly draws an initial population of individual portfolio allocations that are generated from a portfolio allocations archive by using a combination of linear programming and sequential linear programming algorithms; passes the initial population of portfolio allocations through a dominance filter to identify a non-dominated subset of parent portfolio allocations; commits the non-dominated subset of parent portfolio allocations to a non-dominated portfolio allocations archive; randomly combines matched pairs of parent portfolio allocations to create offspring portfolio allocations; passes the offspring portfolio allocations through the dominance filter to identify a non-dominated subset of offspring portfolio allocations; combines the non-dominated subset of parent portfolio allocations with the non-dominated subset of offspring portfolio allocations into a larger set of portfolio allocations; passes the larger set of portfolio allocations through a non-crowding filter to identify a reduced subset of portfolio allocations; creates a new population of individual portfolio allocations from the reduced subset of portfolio allocations; updates the non-dominated portfolio allocations archive with the new population of individual portfolio allocations; and passes the updated non-dominated portfolio allocations archive through the dominance filter to generate an interim efficient frontier in a portfolio performance space having at least three-dimensions, the interim efficient frontier being used in investment decisioning.

47. (New) The system of Claim 46, wherein the non-dominated subset of parent portfolio allocations has a first cardinality.

48. (New) The system of Claim 47, wherein the non-dominated subset of offspring portfolio allocations has a second cardinality that is different than the first cardinality.

49. (New) The system of Claim 48, wherein the larger set of portfolio allocations has a third cardinality that is equal to the first cardinality plus the second cardinality.

50. (New) The system of Claim 49, wherein the reduced subset of portfolio allocations has a fourth cardinality that is less than the third cardinality.

51. (New) The system of Claim 46, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is exactly equal to the reduced set of portfolio allocations if the fourth cardinality is equal to the initial population of individual portfolio allocations.

52. (New) The system of Claim 46, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is created by randomly drawing additional individual portfolio allocations from the portfolio allocations archive if the fourth cardinality is less than to the initial population of individual portfolio allocations.

53. (New) The system of Claim 46, wherein the reduced subset of portfolio allocations has a fourth cardinality, and wherein the new population of individual portfolio allocations is created by randomly discarding individual portfolio allocations from the reduced subset of portfolio allocations if the fourth cardinality is greater than to the initial population of individual portfolio allocations.

54. (New) The system of Claim 53, wherein the new population of individual portfolio allocations is created by randomly injecting individual portfolio allocations from the portfolio allocations archive until the fourth cardinality is equal to a desired number of individual portfolio allocations.